

(No Model.)

W. C. WOOD.

LIFE PRESERVING CUSHION.

No. 264,814.

Patented Sept. 19, 1882.

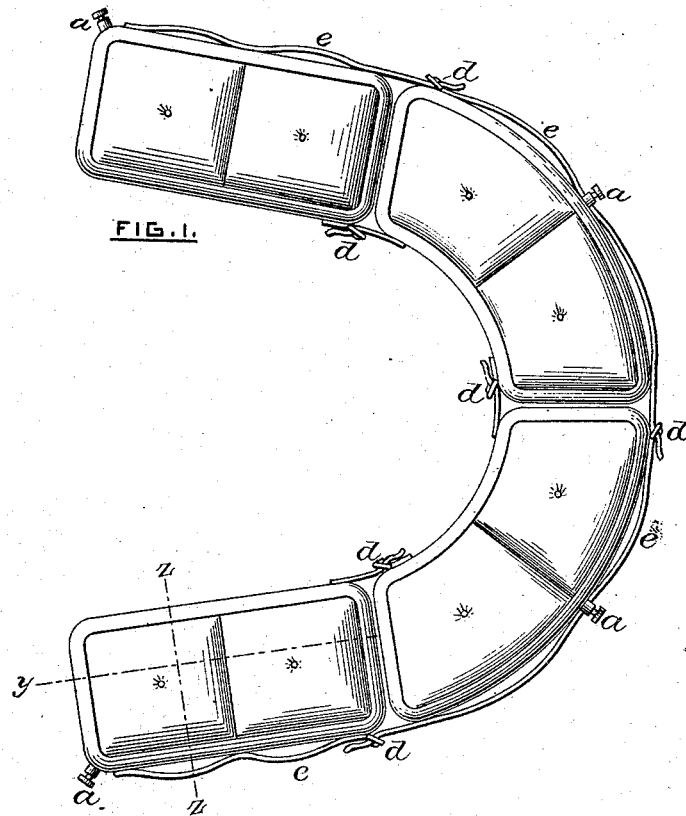


FIG. 1.

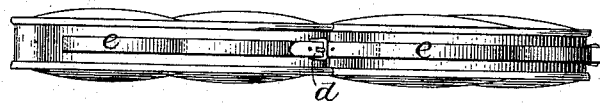


FIG. 2.

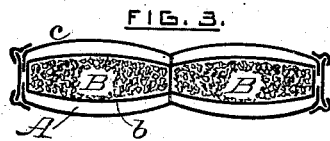


FIG. 3.

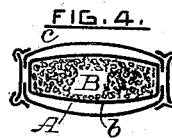


FIG. 4.

ATTEST:

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UNITED STATES PATENT OFFICE.

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LIFE-PRESERVING CUSHION.

SPECIFICATION forming part of Letters Patent No. 264,814, dated September 19, 1882.

Application filed April 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. WOOD, of the city of Washington, in the District of Columbia, have invented certain new and useful
5 Improvements in Ships' Cushions, Mattresses, &c., for Life-Saving Purposes; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a
10 clear, true, and complete description of my invention.

It is well known that air-filled cushions and other similar articles have long been known and used; but it is equally well known that
15 when in use as cushions or mattresses such articles, as heretofore constructed, are subject to more or less constant wear and strain, and liable to be punctured and rendered worthless, and also that the metallic connections usually
20 employed for inflation and retention of air by constant use are liable to and do frequently become leaky. I recognize confined air as the best medium that can be practically employed for the attainment of buoyancy; and one object
25 of my invention is to so construct air-filled cushions or mattresses that when used as such they will be relieved from those strains which would ordinarily be liable to injure such articles as usually heretofore constructed.

Another object of my invention is to so construct such articles that when by accident or wear and rough usage their buoyancy is impaired, by the loss of their capacity to securely retain the air with which they have been
35 charged, they will nevertheless continue to possess a life-saving buoyant capacity as nearly approximating to that of the air-filled articles as it is in my judgment possible to obtain.

Another object of my invention is to provide
40 buoyant matter or material which, although soft and yielding, will not be liable to become unduly solidified or matted, and which may from time to time be readily shaken up and restored to its original condition.

To more particularly describe my invention, I will refer to the accompanying drawings, in which Figure 1 is a top view of a series of
45 boat-cushions embodying my invention. Figs.

2, 3, and 4 are respectively a side view and longitudinal and lateral sections of the same. 50

Although in my drawings I have only illustrated my invention as applied to stern-cushions for row-boats, or for the cockpits of small yachts, it will be ample for illustrating the application of the several features of my invention to mattresses and to cushions for
55 chairs, settees, &c.

Referring to the drawings, it is to be understood that the exterior casing of the life-saving cushion or mattress is to be composed of
60 waterproofed and air-tight flexible material—preferably woolen or cotton cloth—having an exterior face which is natural to the fabric, and thus afford the general appearance of ordinary cushions or mattresses. For service
65 where style or finish is of little consequence the exterior face may be composed of a layer of water-proof composition. Each main air chamber or casing A is provided with an air injecting and discharging tube, *a*, guarded by
70 a screw-plug or other form of valve, all in a manner common to well-known flexible air-filled articles adapted to life-saving purposes.

One portion of my invention consists in the combination, with such a flexible air-tight
75 chamber, of an interior buoyant cushion, B, which is of sufficiently smaller size to afford ample space around it, or between it and the interior walls of the main air chamber or casing, to provide for the reception and retention
80 of a sufficient volume of air to secure the degree of buoyancy desired in each case. The presence of the interior buoyant cushion enables the article to be used as a seat or mattress without unduly straining the main air
85 chamber or casing, and this I believe to be an entirely novel feature, regardless of the particular construction of said interior cushion, serving as a weight-supporting medium. It is of course important that said interior cushion
90 should of itself be buoyant, in order that the buoyancy of the whole structure be not materially impaired. It is desirable, too, that the interior cushion should be filled with soft yielding and at the same time elastic material. 95
Sponge, cork, or hair may be employed as a

filling, as well as many other substances commonly used for filling ordinary cushions and mattresses, without departure from this portion of my invention, for it is obvious that, regardless of its particular kind of filling, said cushion will serve as a medium for protecting the air-chamber from such strains as it would be exposed to if there were no interior cushion to bear the weight of persons sitting or reclining thereon. It will readily be seen, however, that it is desirable and even important that said filling be of a specially buoyant character, for if the outer and inner casings, *c* and *b*, should both get punctured sponge or hair, for instance, would deprive the cushion of that buoyancy which it should in its best form possess under all adverse circumstances. Granulated cork, however, serves an excellent purpose, for it is readily shaken up from time to time and kept light and soft as a mass, and should water get to it considerable time must elapse before its buoyant property would be materially impaired. Although comparatively expensive, a cushion filled with small air-tight hollow flexible balls is found to be admirably fitted for my purpose, although it is to be distinctly understood that I am aware that such cushions and mattresses are not new, and they can only enter into my invention as a part thereof when combined with an exterior flexible air-tight chamber, as described, for relieving said chamber from compressing strains, and serving in itself as a buoyant medium in the event of the possible deficiencies in buoyancy of said outer chamber or casing. Having economy in view, however, I have devoted my attention to granulated cork or other light porous woody matter, which, in accordance with one feature of my invention, is treated with a water-repellent, so that each piece or particle of cork permeated with air-cells is rendered practically water-tight, and therefore practically incapable of saturation, and therefore it is similar in some respects to the hollow balls before referred to. It is desirable that the water-repellent employed be of such character as will not cause the pieces of cork to mat or consolidate with each other materially, or cause them to lose their individual elasticity, and thereby render the mass undesirable as a cushioning medium. The cork may be treated with fair results with various solutions containing water-proof gums—as, for instance, a light solution of naphtha and caoutchouc or rubber cement—with or without such mineral bodies added thereto as will enable the cork when thus treated to undergo the process of vulcanization. When thus treated each particle of cork is incased in a light film, and the interstices are sealed by the caoutchouc. I claim it to be novel to specially treat cork for this purpose, and therefore do not limit myself to any particular method or material employed, except as hereinafter indicated.

As a special feature of my invention, I em-

ploy lamp-black in connection with cork, although I am well aware that it is not new to employ lamp-black as a buoyant medium in can-buoys and in life-saving buoys of various kinds other than such as are flexible.

The granulated cork may of course be varied as to the size of the particles; but I should prefer not to use it larger than, say, one-half inch in diameter, commingled with particles so fine as to be commonly termed "cork-dust;" but I do not thereby mean to include powdered cork, as in my judgment nothing which will pass through a screen of, say, three-sixteenths of an inch mesh would be desirable. To each pound of cork I apply, say, two ounces of good dry lamp-black, and tumble the mass in a revolving barrel for several hours. The proportion of lamp-black may, however, be largely varied without materially affecting the desired results, although care should be taken to avoid such excess of lamp-black as would be liable to result in the matting or solidifying of the mass under the pressures incident to the ordinary use of cushions or mattresses.

Referring to the drawings, I will state the desirability of having in a series of boat and yacht cushions fitted to a certain outline the straps and buckles *d*, by which the several cushions may be connected for better maintaining them in position with relation to each other while in use as cushions, and being unsecured to the boat they can be readily thrown overboard in case of accident and afford a reliable buoy for several persons without liability of their separation. It is also desirable that each section have separate holding straps or loops *e*, which may be readily and firmly grasped, and through which the arms of a person may be passed, if desired. The particular construction of the casing for the inner and outer cushions, and their mode of union one to the other, may obviously be largely varied. I prefer that the cork-filled cushion have a casing which shall be water-tight and air-tight, but not so inflated that the cushioning material cannot sustain the weights placed thereon. If made of fabric coated with vulcanizable compound, the vulcanizing process need not be applied until the cushion has been filled, and the opening can then be tightly closed with a gum joint; or the casing may first be vulcanized with only a small opening left at one corner for the introduction of the cork, &c., after which said opening may be tightly sealed by suitable folds, heavy stitching, and the proper use of rubber cement.

A cushion or mattress embodying the several features of my invention, when new, will possess as great buoyant capacity as can possibly be obtained with a flexible structure of the same internal dimensions, and it may be kept always well inflated while in regular use without liability of undue strains tending to render it leaky. If the outer casing be accidentally punctured or worn, there will still remain a buoyant capacity of great life-saving

value. Should the inner cushion be also punctured and wateradmitted to its filling, its buoyant capacity would of course be diminished, but it nevertheless will serve as a reliable support. A cushion, say, twenty-four inches long, sixteen inches wide, and about four inches thick, at its best will support from four to six persons in the water, and if the same cushion be pierced through and through, as with a knife, in several places, it will still support about half as many people, and its buoyant capacity will be maintained for many hours, the lamp-black being capable of protecting the cork from water, even if exposed thereto for several days.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A life-saving mattress or cushion embodying in combination, substantially as hereinbefore described, an exterior flexible air-tight cas-

ing and an interior casing filled with a suitable cushioning medium.

2. A life-saving mattress or cushion embodying in combination, substantially as hereinbefore described, an exterior flexible air-tight casing, an interior casing, and a filling for said interior casing, composed of granulated cork or other buoyant woody matter treated with a water-repelling medium.

3. A life-saving mattress or cushion containing granulated woody matter treated with a water-repellent, substantially as described.

4. A life-saving mattress or cushion containing granulated woody matter and lamp-black, substantially as described.

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Witnesses:

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HOWELL BARTLE.